



Srini Science Mind
Abdul Kalam Physical Science Group



NEW

9th class

PHYSICAL SCIENCE

LESSON PLAN with BYJU's Content

Visit: [srini science mind](http://srini-science-mind.com)



M.SRINIVASA RAO, SA(PS) SPSMHS GUDIVADA PH: 9848143855

LESSON PLAN

CLASS: 09

SUBJECT: PS

Name of the Teacher: M.Srinivasa Rao

Name of the School: SPSMH School, Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Work and Energy (Chapter-10)	Introduction - Work	1			
	Scientific concept of work – Work done by Constant force	2			
	Energy – Forms of energy	1			
	Kinetic energy	3			
	BYJU's Content Review	1			
	Potential energy	3			
	Potential Energy of an object at a height	1			
	Law of Conservation of Energy	2			
	Rate of doing work	2			
	BYJU's Content Review	1			

Prior Concept/Skills:

1. What are S.I units of Force and Displacement?
2. How many forms of energy are there?
3. How do green plants produce food?

Learning Outcomes:

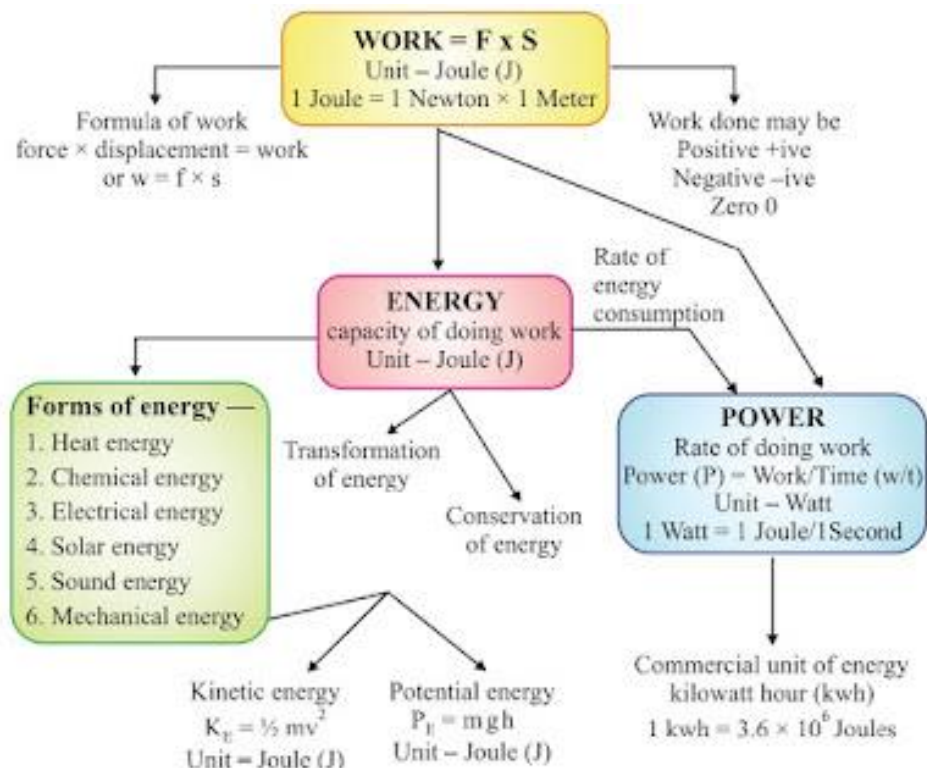
1. Uses scientific symbols to represent various physical quantities and SI units.
2. Derives formulae and equations of work, kinetic energy, potential energy and power.
3. Calculates using the data given of work done of an object.
4. Calculates using the data given of kinetic and potential energies of an object.
5. Draws flow charts of transfer of energy.
6. Conducts investigations on the transfer of energy from kinetic energy to potential energy and vice versa.
7. Explains processes of transfer of energy.
8. Draw a diagram to show the conservation of mechanical energy in case of a free falling body.
9. Applies scientific concepts in daily life and solving problems of law of conservation of energy.
10. Explains processes of conservation laws.
11. Uses scientific conventions and equations to represent various quantities of energies.
12. Communicates the findings and conclusions effectively of Conservation of energy
13. Calculates using the data given of conservation of energy.
14. Draws conclusion of power delivered by the machines.

No. of Periods

- 2
1
1
2
1
1
1
1
2
1
1
1
1
1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students will identify situations where work is done in everyday life.
2. Students imagine situations in which energy transformations occur in day-to-day life,
3. Students give examples of energy transformations that occur in everyday life.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
<ol style="list-style-type: none"> 1. Discussion and explain the difference between the way we use the term work in our day-to-day life and the way we use in Science. 2. Explain the scientific meaning of the work with examples. 	<ol style="list-style-type: none"> 1. Discussion of some situations. (Where work is done) 2. Students give examples of work. 	<ol style="list-style-type: none"> 1. Students identify where is work done or not 2. Students express what conditions are necessary to do work. 	<ol style="list-style-type: none"> 1. Can work be done without force? 2. What would be the work done when the force on the object is zero?

3. Discussion and explain the definition of work in science and formula	3. Group discussion on work activity.	3. Students complete the homework.	3. Is work scalar or vector?
4. Explain the problems and solutions on work.	4. Students will solve the problems.	4. Students give the value of 'g' and their units.	4. What is the formula for work done on an object?
5. Discussion and explain the concept of Energy.	5. 'How can we decide that an object possess energy or not? – Group discussion.	5. Students write the definition of energy?	5. What is the SI unit for Energy?
6. Discussion and explain the sources of energy, forms of energy.	6. Students collect information on forms of energy	6. Students give examples of sources of energy.	6. What two factors affect the amount of energy of an object?
7. Explain and conduct an activities on kinetic energy with help of a table, metal ball and a wooden block.	7. Students describe the activity in their own way.	7. Students give a reason why kinetic energy of the objects depend on velocity.	7. What was the primary source of energy?
8. Explain the numerical expression for kinetic energy and solved the problems.	8. Students will solve the problems.	8. Students derive the formula of kinetic energy.	8. Why does kinetic energy depend on mass?
9. Review of Byju's tab content	9. Viewing the content in Byju's Tab	9. Viewing the content in Byju's Tab	9. What is the formula for kinetic energy?
10. Explain and conduct an activities on potential energy with help of suitable materials .	10. Students collect information on potential energy	10. Students complete the homework.	10. Define Potential energy?
11. Observing the potential energy in an object at different heights.	11. Does the international space station have gravitational potential energy? – Group discussion.	11. Students write the definition of potential energy.	11. What type of potential energy is due to gravity?
12. Explain the numerical expression for potential energy and solved the problems.	12. Students derive the formula of potential energy.	12. Students solve problems.	12. What is the S.I unit of potential energy?
13. Discussion and explain of the conservation of mechanical energy.	13. Students explain the process of conservation of mechanical energy.	13. Students draw a diagram of the conservation of mechanical energy.	13. What is total mechanical energy equal to?
14. Explain and demonstrate of calculating the total energy of the	14. Students calculated potential and kinetic energies.	14. Students complete the homework.	14. Is the mechanical energy conserved in the

freely falling object at different heights.			system?
15. Explain the concept of Power and its problems.	15. Students collect information on power of machines	15. Students solve problems.	15. What is the unit for power?
16. Review of Byju's tab content	16. Viewing the content in Byju's Tab	16. Viewing the content in Byju's Tab	

Check For Understanding Questions	TLM's (Digital + Print)
<p>1. Factual:</p> <ol style="list-style-type: none"> 1. When the work is said to be done? 2. What energy conversion occurs when riding a bicycle? 3. How do you know which object has the most kinetic energy? <p>2. Open Ended/Critical Thinking:</p> <ol style="list-style-type: none"> 1. What happens to the speed of a ball while it moves up with an initial velocity? 2. Is the energy spent by the force doing work the same every time? 3. What would happen if nature does not allow the transfer of energy? <p>3. Student Practice Questions & Activities:</p> <ol style="list-style-type: none"> 1. A battery lights a bulb. Describe the energy changes involved in the process. 2. Certain force acting on a 20 kg mass changes its velocity from 5 m s^{-1} to 2 m s^{-1}. Calculate the work done by the force. 3. State the principle of conservation of energy. 4. What are the various energy transformations that occur when you are riding a bicycle? 5. An electric heater is rated 1500 W. How much energy does it use in 10 hours? 	<ol style="list-style-type: none"> 1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, DIKSHA App 4. YouTube video links 5. Byju's Tab 6. IFP
<p>Assessment:</p> <ol style="list-style-type: none"> 1. The potential energy of a freely falling object decreases progressively. Does this violate the law of conservation of energy? Why? 2. Soni says that the acceleration in an object could be zero even when several forces are acting on it. Do you agree with her? Why? 3. The potential energy of a freely falling object decreases progressively. Does this violate the law of conservation of energy? Why? 4. What is the work done by the force of gravity on a satellite moving round the earth? Justify your answer. 5. Find the energy in joules consumed in 10 hours by four devices of power 500 W each. 	

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS